Original Research Article

The Incidence Of Retinopathy Of Prematurity At A Tertiary Hospital

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Abstract

Purpose: To study the incidence and risk factors of retinopathy of prematurity (ROP).
Methods: A prospective observational study of premature babies admitted in NICU with a gestational age of 32 weeks or less at birth and a birth weight of 1500 g or less was made. Sick infants were included even if they were older and heavier. ROP screening was done in 200 cases from the fourth postnatal week and was followed up.
Results: The incidence of ROP was 19.5%. Most common maternal risk factor was pregnancy induced hypertension (17.9%). Low birth weight (LBW) and respiratory distress syndrome (RDS) (89.7%) were the most common risk factors in infants.
Conclusion: In our study the most common risk factors were LBW and RDS.
Keywords: AIDS, clinicopathology, cutaneous lesions, HIV.

Introduction

Retinopathy of prematurity (ROP) is characterised by abnormal development of retinal vasculature. It is an important and preventable cause of childhood blindness1. 50,000 cases of childhood blindness in the world every year are estimated to be caused by ROP2. Due to advancement in the health care system, survival rates of extremely premature babies have increased. This has led to an increase in the incidence of ROP in developing countries3. Previously, a major risk factor for development of ROP was thought to be use of high concentration of supplemental oxygen therapy 4,5. However, ROP has been observed in patients without oxygen therapy6. Also, low birth weight (BW) and low gestational age (GA) are well-known risk factors for ROP7,8.

The criteria for ROP screening has been well determined in industrialised countries but since the blindness from ROP varies from region to region, a single screening program cannot suit all regions as seen in various studies9.

Purpose

To study the incidence and risk factors of retinopathy of prematurity (ROP) at a tertiary hospital.

Methods

This is a prospective observational study which included premature babies who were referred for ROP screening, admitted in NICU from with a gestational age of 32 weeks or less at birth and a birth weight of 1500 g or less. Babies >32 weeks and >1500 grams were screened if the babies were sick as per paediatricians advice. ROP screening was done from the fourth postnatal week and within four weeks if the baby was ≤30 weeks and was followed up accordingly.

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Data on birth weight, gestational age, post conceptional age was noted. Maternal risk factors like (pregnancy induced hypertension, gestational diabetes) and baby risk factors like (respiratory distress syndrome, sepsis) were also noted in the history.

Babies in whom media opacity (not related to ROP) precluding fundus visualization disease, loss to follow-up were excluded from the study.

The pupils were dilated by application of tropicamide 0.5% and phenylephrine 1%, and the patients were examined by a single retina specialist using a binocular indirect ophthalmoscope with 20 D lens. A sterile lid speculum was used.

ROP was classified according to the international classification of ROP and follow-up schedules were designed in accordance with suggestions of the American Academy of Pediatrics, American Academy of Ophthalmology and American Association for Pediatric Ophthalmology and Strabismus10.

Results

During the period of 1 year, 200 babies were screened. Male babies screened were 110, and female babies were 90. Gestational age (GA) of babies ranged from 26 weeks-38 weeks (meanGA-33wks). Birth weight (BW) of the babies range from 1kg-3.5kg (meanBW-2.25kg). Incidence of ROP was 19.5% (39 babies) in our study. Different stages of ROP seen are as shown in the table1. In the babies diagnosed to have ROP the gestational age ranged from 26weeks-37weeks (with 30% being more than 32 weeks). Birth weight ranged from 1kg-2kg (with 25.6% being more than 1.5kg). Most common maternal risk factor for ROP was pregnancy induced hypertension in 7 patients (17.9%) followed by gestational diabetes in 2 cases (5.1%). The most common neonatal risk factors for ROP was respiratory distress syndrome in 35 babies (89.7%) followed by sepsis in 5 cases (12.8%).

Table 1:ROP Stages

ROP (Stage)	NO. (%)
Stage 1	5 (12.8%)
Stage 2	16 (41%)
Stage 3	18 (46.2%)
Stage 4	0
Stage 5	0

Discussion

ROP is an important cause of childhood blindness, which if diagnosed and managed early can prevent permanent visual loss. The incidence of ROP in premature infants in our study was 19.5%. In developed countries, the reported incidence of ROP ranges from 19.3% to 25% (12,13). Likewise in India, the incidence of ROP depends on the region of study and ranges from 20% to 47.3% (14,15). In the current study the incidence of ROP is almost same as other studies performed in India. As reported by Palmer, *et al*.(16), incidence and severity of ROP was closely related to lower birth weight and lower postconceptional age, as was seen in our study.

There are varying screening criteria described by different authors. Vinekar,*et al*. (17)suggested that the scenario in developing countries is quite different. Larger and gestationally 'older' infants are more likely to develop ROP compared to their counterparts in Western countries. Hence, the application of Western screening guidelines for developing countries has been questioned by Jalali, *et al*(18). As a higher cut off limit, they recommended screening babies born at<37 weeks gestation and/or birthweight <2000g in the presence of a high sickness score, in order to prevent missing any infant with threshold ROP.So, we feel that all babies with birthweight less than 1500g and gestation ≤32 weeks should be routinely screened. Infants with birthweight between 1500-2000g and gestational age more than 32 weeks should be screened at the discretion of the neonatologist, depending on other risk factors during the course of stay in the NICU.

Many risk factors have been reported to predispose to the development of ROP. In our study the most common maternal risk factor noted was pregnancy induced hypertension seen in 17.9% followed by gestational diabetes in 5.1%. Most common neonatal risk factors were respiratory distress syndrome in 89.7% followed by sepsis in 12.8%.

Oxygen therapy was not found to influence the development of ROP in our study.

Conclusion

ROP screening guidelines should vary according to the region. The most common risk factors were low birth weight, lower gestational age and respiratory distress syndrome and pregnancy induced hypertension.

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